



Lines of Best Fit: Writing & Interpreting Equations #2 (page 1)

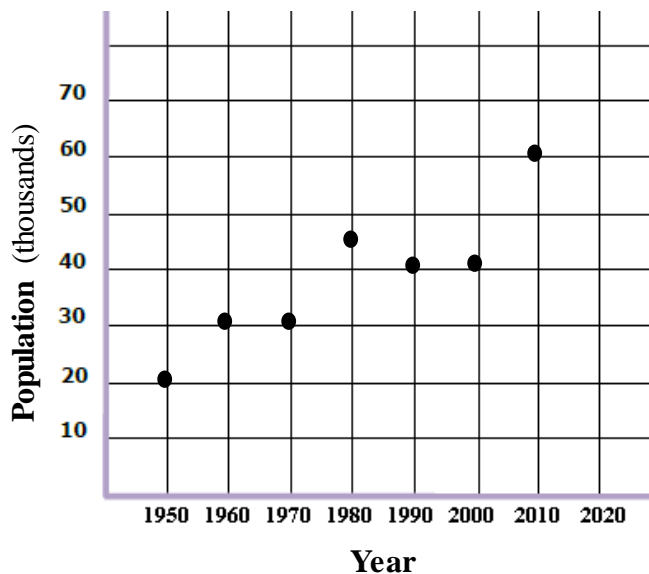
1. The table lists the population of a town from the year 1950 to 2010. A scatterplot of the data is also given.

Year	1950	1960	1970	1980	1990	2000	2010
Population (in thousands)	20	30	30	45	40	40	60

- a) Draw a line of best fit to model the data.
- b) What type of correlation does it show?
- c) Find an equation in slope-intercept form for the line. To do this,
 - First change your x -axis to represent year 0, 10, 20 etc.

Year	10	20					
Population	20	30	30	45	40	40	60

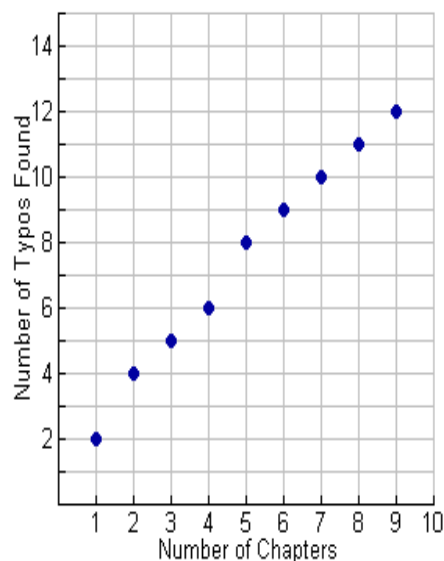
- Choose 2 points: (,) (,)
- Slope = $\frac{\text{rise}}{\text{run}} =$
- Plug in (x, y) you used to find slope and m (slope) to solve for the y -intercept, b .
- Now write the linear equation using m and b , $y = mx + b$!



2. The scatterplot of data below is comparing the number of chapters in a textbook to the number of typos found within the book.

- a) Draw a line of best fit to model the data.
- b) Write an equation in slope-intercept form for your line of best fit.

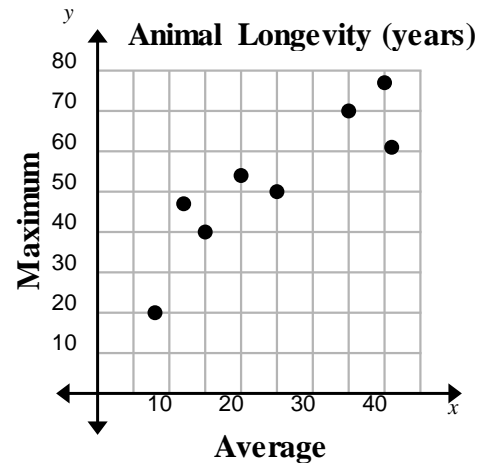
- c) What is the slope of the graph?
- d) What does the slope of the line mean in context to this situation?



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3. The scatter plot shows the average and maximum longevity of various animals in captivity.

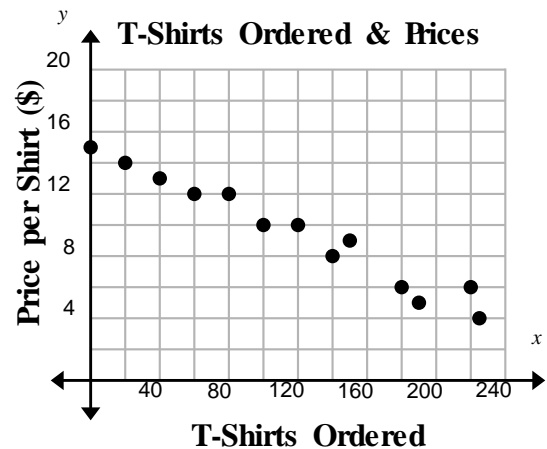
- Draw a line of best fit to model the data.
- Write an equation in slope-intercept form for your line of best fit.



- What is the slope of the graph?
 - What does the slope of the line mean in context to this situation?
- e) Predict the maximum longevity for an animal with an average longevity of 33 years. Is this an example of extrapolation or interpolation?

4. The scatter plot shows relationship between the number of t-shirts ordered and the individual price of each shirt.

- Draw a line of best fit to model the data.
- Write an equation in slope-intercept form for your line of best fit.



- What is the slope of the graph?
 - What does the slope of the line mean in context to this situation?
- e) Predict the price per shirt for an order of 250 shirts. Is this an example of extrapolation or interpolation?